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THE UNIVERSITY OF BRITISH COLUMBIA

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## In the news

### UBC Reports

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## Highlights of UBC media coverage in October 2010

Compiled by Heather Amos

### Tennis grunTERS 'gain advantage'

The *New York Times*, the *BBC*, the *Daily Mail*, *Agence France Presse*, *CBC* and other media outlets related research results from UBC and the University of Hawaii about tennis players who grunt.

A study by **Scott Sinnett** from the University of Hawaii at Manoa, who was a post-doctoral fellow at UBC when the research was conducted, and UBC psychology professor **Alan Kingstone** looked at the effects of noise on shot perception during a tennis match.

"The presence of an extraneous sound interfered" with participants' performance, "making their responses both slower and less accurate," said the researchers.

### German, Canadian scientists to open quantum physics center

UBC has signed a formal agreement with Germany's Max Planck Society to open a new centre for the study of quantum materials such as superconductors. UBC will house the new research facility, the Max Planck-UBC Centre for Quantum Materials, which is to be funded by the Max Planck Society.

The new facility is only the third such centre outside Germany, as was reported by *Agence France Presse*, the *Globe and Mail*, the *Victoria Times Colonist* and others.

"The knowledge and discoveries generated from these collaborations will profoundly change the lives of present and future generations," said UBC President Stephen Toope.

### Documentary by UBC journalism students wins Emmy

A team of students from UBC's School of Journalism won an Emmy for Outstanding Investigative Journalism in a News Magazine in an investigative piece on the way computers and cellphones from the developed world are unsafely disposed of in developing countries.

*CBC The National*, the *Globe and Mail*, *CTV* and others picked up on the win for the documentary Ghana: *Digital Dumping Ground* which aired on *PBS's Frontline* in June 2009. This is the first time Canadian students have won such an award.

"It shows that we're doing great journalism at the same time as we're training great journalists," said school director **Mary Lynn Young**.

"A lot of students said it was the most intense learning experience they've ever had so it's great to hear as a teacher," said Professor **Peter Klein** who worked on the documentary with the students.

### Sex trafficking: a national disgrace

Provincial governments must create regional police task forces and offices to co-ordinate victim services if they are serious about ending "modern-day slavery" in Canada, said **Benjamin Perrin**, an associate law professor at UBC and a human-trafficking expert.

"There are hundreds, perhaps thousands of victims exploited every year in our country," said the author of the new book *Invisible Chains: Canada's Underground World of Human Trafficking*, which was highlighted by the *National Post*, the *Globe and Mail*, *CBC*, *CTV*, the *Ottawa Citizen* and others.

### Old Auditorium and Roy Barnett Recital Hall are open again

The *Vancouver Sun*, *CBC*, *City TV* and the *Province* described the reopening of UBC's Old Auditorium and Recital Hall.

After more than \$20 million in renovations, the Old Auditorium and what is now known as the Roy Barnett Recital Hall were updated with seismic upgrades and state-of-the-art equipment. These overhauls are part of the UBC Renew campaign that sees the university's older buildings renovated in lieu of constructing new facilities.

"This is a place that had such a history for UBC," said **Nancy Hermiston** of UBC's School of Music. "It was a meeting place, it was an educational place, it was a cultural space to bring the community and the university together, and now all those things can happen again."

"It's not just a health problem," says Mawji. "Electricity allows people to store food, work longer hours and process grains into flour which can be sold for more money."

Mawji was intent on making power accessible but it has taken him more than two years to turn his intentions into reality. He worked with Dr. Shafik Dharamsi, an assistant professor in the Department of Family Practice in the

# Lighting up a community in Tanzania

**Naeem Mawji knew that many of his fellow Tanzanians did not have access to electricity. But, it wasn't until he got to UBC and investigated the matter that he realized the extent of the problem.**

By Heather Amos

A child studies by the light of a kerosene lamp in the school in Masurura, Tanzania.



Naeem Mawji Photograph

**Fourth-year chemical engineering student Naeem Mawji did some research and discovered that 80 per cent of his fellow Tanzanians don't have access to electricity, and the figure jumps to 97 per cent in rural areas. He also learned that families without electricity depend on kerosene-fueled lamps for lighting and that 75 Tanzanians die every day from respiratory issues and burns caused by these lamps.**

"It's not just a health problem," says Mawji. "Electricity allows people to store food, work longer hours and process grains into flour which can be sold for more money."

Mawji was intent on making power accessible but it has taken him more than two years to turn his intentions into reality. He worked with Dr. Shafik Dharamsi, an assistant professor in the Department of Family Practice in the

Faculty of Medicine and the Faculty Lead of the Global Health Network at the Liu Institute for Global Issues. They also worked with the Ethics of International Engagement and Service Learning (EIESL) to develop a plan.

UBC's EIESL project explores the ethical dilemmas of international engagement projects, and aims to make UBC's international outreach sustainable as well as collaborative with local people.

"Naeem's project is a model for EIESL," says Dr. Dharamsi, the principal investigator at EIESL. "It's not about charity; it's about social justice through community partnership, sustainable engagement, and solidarity."

Mawji, with the help of his father, who works in road construction, found it simple to connect with a community.

The village of Masurura, just outside

the city of Musoma where Mawji grew up, had no access to power and does not use generators. In Masurura, people walk long distances to get water, and the medical centre has to close when the sun goes down. To charge the cell phones that most villagers own, one woman would travel 20 kilometers to a nearby town, charge a car battery and bring it back to Masurura.

Mawji worked with the community to develop a plan. The priority was to provide electricity for the community centre, the school and the medical centre.

"The objective of this project was to first introduce the technology to villagers by illuminating communal spaces and using those spaces as a platform to educate, interact and collaborate with the community," said Mawji.

In July 2009, Mawji installed solar lighting systems in the community

centre, the school and the medical centre. All three systems are also equipped to charge cell phones. The fees from this service are collected and reinvested by the village council to maintain and repair the systems.

After this initial project was complete, Mawji decided to expand. He started a social enterprise, Carbon X Energy, and recently won a grant of \$100,000 from the World Bank through the Lighting Rural Tanzania Competition 2010. The funds from this award are now being used to build a solar-powered mini-grid to provide power to some of the homes in Masurura.

Last May, Mawji returned to Tanzania with two other UBC students and began preliminary work to build a solar powered mini-grid that will provide power to some of the homes in Masurura. During this trip, UBC

student Dan Kahn was approached by a man living in the village.

"He came up to me," says Kahn, "and said, 'Don't say you're going to do something and not do it. So many people come and say they will do something and then they leave.'"

This is one of many recurring issues that EIESL has identified; it's the type of problem the project hopes to prevent.

"When I heard Naeem talk, it came through loud and clear that he was genuinely interested in working and learning with the community where he's from, and improving the quality of life in a sustainable and enduring way" says Dr. Dharamsi. ●

Visit [www.publicaffairs.ubc.ca/ubc-reports/](http://www.publicaffairs.ubc.ca/ubc-reports/) to view a slideshow of Mawji's work in Masurura.

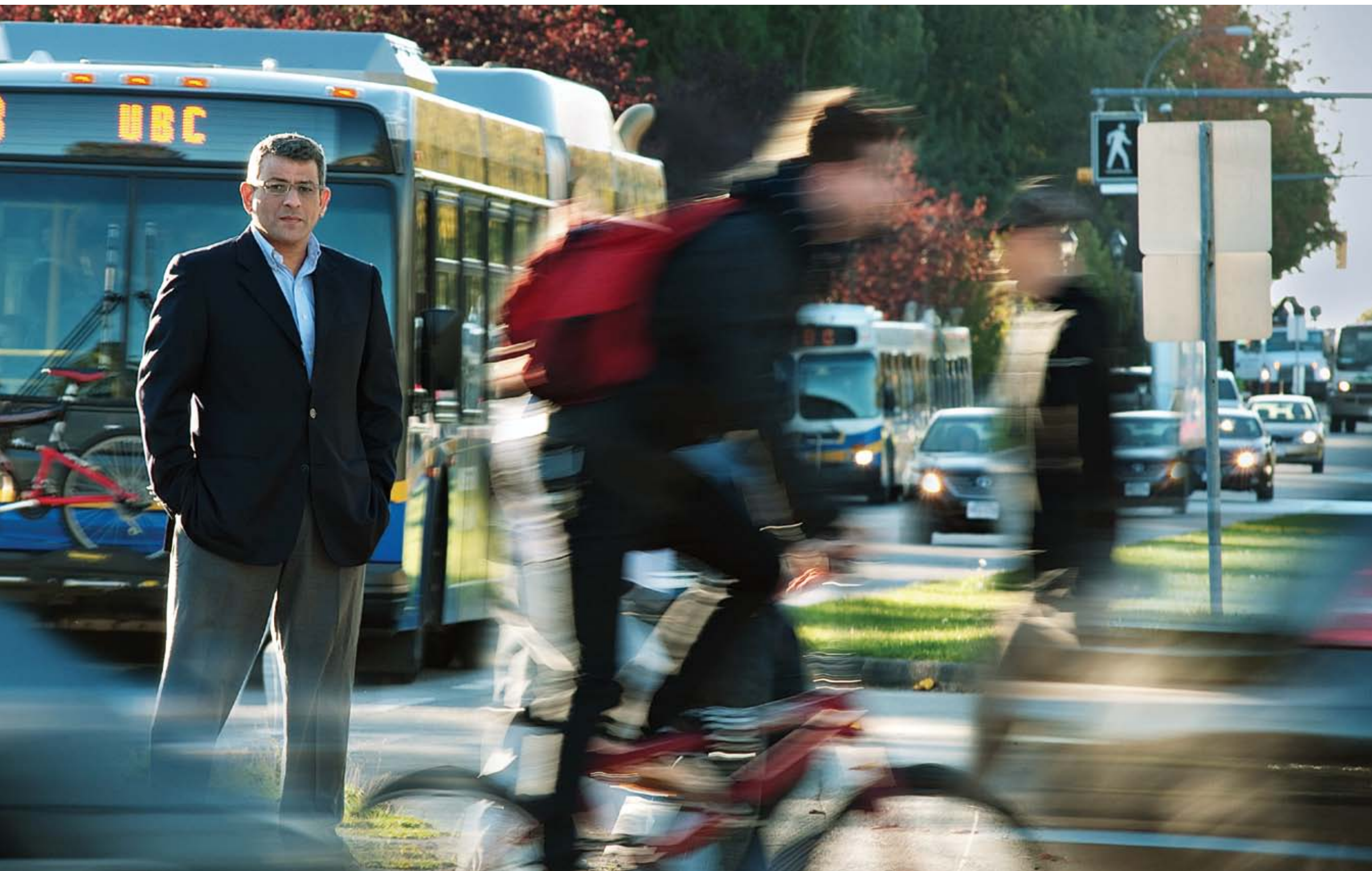


# Building safer roads

Video analysis can help traffic planners learn lessons from bad drivers

By Lorraine Chan

Prof. **Tarek Sayed** uses robust and precise video data to prevent future accidents.



Martin Dee Photograph

**Close calls on the road can do more than just smarten up bad drivers. UBC road safety expert Tarek Sayed has devised a way to automatically track and analyze “near misses,” using the findings to improve highway operations and traffic design, and ultimately reduce the number and severity of car crashes.**

“This is a new technique that we first developed at UBC and is currently being applied in several projects worldwide,” says Sayed, professor of civil engineering in the Faculty of Applied Science.

Sayed is currently running pilot projects of the “computer vision and automated safety analysis” in Vancouver, Edmonton, Penticton, Calgary, Oakland, Cairo and Kuwait City.

The upfront investment for the video monitoring is low, since it only requires an ordinary \$300 digital camera mounted on a pole to track motorists.

The video camera is then left to record between one and three days, depending on traffic volume.

Sayed then analyzes the video data using a software program he developed with UBC graduate students and research associates. The program’s algorithms isolate the types of potential collisions and their degrees of severity.

“As well, we use traffic conflict techniques such as an extrapolated ‘time-to-collision measure’ to better understand the split-second responses and behaviour of drivers during these conflicts.”

Partnering cities have embraced this innovation, says Sayed. “The biggest advantage of using video recording and automated analysis is that it reduces the amount of required data from years to mere days.”

Traditionally, road improvement programs evaluated the types and rates of collisions over a period of two to three years, using records from police reports and insurance claims. In some cases, accident statistics would be supplemented by human observation—people hired and trained to record and evaluate the frequency and type of traffic conflicts.

“Historical collision data and human observation are not always reliable or even available,” says Sayed. “In contrast, video sensors provide rich, detailed, inexpensive and permanent observations of traffic scenes.”

He adds that decision makers can then more easily set priorities for highway improvements or design changes when working with robust and precise data. “It’s possible to assign an average cost per incident and evaluate the safety benefits.”

The city of Edmonton, for example, tackled one of its top crash-prone locations after seeing Sayed’s data. A merge ramp on the Yellowhead/Victoria Trail intersection was particularly dangerous, directing drivers into high-volume traffic. Now the location has a right-turn traffic light, reducing the number of collisions along that stretch of highway by 95 per cent.

And in Oakland, Sayed evaluated motion patterns for “pedestrian scramble,” a mode that halts traffic in all four directions. At the “Walk” sign, pedestrians on all four corners of the intersection can cross the street, even diagonally.

“There were significantly higher potential conflicts before the pedestrian scramble.” ●

**“The biggest advantage of using video recording and automated analysis is that it reduces the amount of required data from years to mere days.”**

# A new breed of road engineers

Current standards guiding highway design and planning stem from the 1950s when mobility and standardization rather than safety evaluation were priorities.

**“Forgiving and caring highways” may sound fanciful, but Civil Engineering Prof. Tarek Sayed argues that building roads that anticipate and prevent accidents is a smart way to go.**

Worldwide, car accidents claim 1.3 million lives each year. Annually, car accidents cost the Canadian economy five per cent of the GDP or \$62 billion. Moreover, 95 per cent of car crashes are attributed to driver error.

“I’m not saying that we should ignore bad driving,” says Sayed, “but road safety countermeasures are a cost-effective solution that can save lives and money.”

He contends that solutions can be as simple as making traffic lights more visible or etching “rumble strips” along certain stretches of highway. These grooves in the pavement keep drivers alert and prevent them falling asleep at the wheel.

Sayed explains that current standards guiding highway design and planning stem from the 1950s when mobility and standardization rather than safety evaluation were priorities. But UBC is helping to nudge standards into a new direction, he says. Having supervised more than 50 graduate students, Sayed is producing a new breed of engineers keen to build “smart” roads.

“UBC is doing very well in this area,” says Sayed, who is plugged into an informal network of safety-minded engineers working around the world.

A 2009 study that Sayed completed for the Insurance Corporation of B.C. underlines the value of explicit safety analysis. With co-author Paul de Leur, an ICBC engineer, Sayed evaluated 102 road improvement projects that ranged from signage to median barriers and roundabouts to left-hand turn bays. These improvements led to a 20 per cent reduction in fatal and severe injury crashes and a 12 per cent reduction in non-injury crashes.

In anticipation of the 2010 Olympic Games, the B.C. Ministry of Transportation enlisted Sayed’s help in 2003 in choosing the safest designs for the redevelopment of the scenic Sea to Sky Highway between Vancouver and Whistler.

Sayed provided safety analysis and collision prediction data for the highway, notorious for its rocky, steep and mountainous topography. The Ministry was then able to clarify design parameters, such as the number of curves or the desired degree of a curve.

“Compared to the old Sea to Sky highway, the new design has been able to reduce accidents by 50 per cent.”



**Figure 1**  
A sample of an automatically detected rear-end collision before improvement to the intersection of Yellowhead/Victoria Trail, Edmonton.



**Figure 2**  
A sample of automatically detected pedestrian-vehicle conflict in a before and after safety study of a pedestrian scramble phase in California.



**Figure 3**  
Automatic analysis of pedestrian-vehicle conflicts in downtown Vancouver.

Photographs courtesy of **Tarek Sayed**

## Related UBC research

Civil Engineering Asst. Prof. Gordon Lovegrove is one of Tarek’s former students who has set up a sustainable road safety lab at UBC’s Okanagan campus.

[www.publicaffairs.ubc.ca/2010/07/01/prof-launches-first-sustainable-road-safety-lab/](http://www.publicaffairs.ubc.ca/2010/07/01/prof-launches-first-sustainable-road-safety-lab/)





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## Election Notification

The UBC Staff Pension Plan is currently holding an election for two directors, who upon election will serve four-year terms on the Pension Board. Election packages were sent to members on Thursday, October 28, 2010. The deadline for casting ballots is Thursday, November 25, 2010. If you have not yet received your election package, you may contact the Pension Office at 604 822 8100. Election results will be announced on the SPP website [www.pensions.ubc.ca/staff](http://www.pensions.ubc.ca/staff) on Thursday, December 2, 2010.



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# Dean of inspiration

Gage Averill, the new dean of UBC's Faculty of Arts, can't help but bring a little rock-and-roll attitude with him.

By Basil Waugh

**Gage Averill has the sterling academic credentials you'd expect from someone who will lead one of Canada's largest faculties, including administrative and professional stints at Columbia, Wesleyan, New York University and most recently the University of Toronto, as Vice Principal Academic and Dean for its Mississauga campus.**

But to lead a place as big and diverse as the Faculty of Arts—with more than 15,000 students, faculty and staff engaged in the entire spectrum of social sciences, humanities and performing arts—takes a broad foundation of experiences.

And Averill has no shortage of diverse experiences. A world-renowned ethnomusicologist and scholar of Haitian

These formative experiences—many outside academia in communities across Canada, the U.S. and the Caribbean—have made Averill an outspoken proponent of making Canadian universities more responsive to society, bolder and less defensive. If that comes across a little rock-and-roll, so be it.

"The global challenges facing Canada won't be solved with minor, incremental changes," says Averill, who was named UBC's 16th Dean of Arts on July 1, replacing Nancy Gallini. "We need to be globally connected, recruiting globally, and expansive in our thinking—and certainly willing to shake things up—if we are to succeed."

Universities should be working to

and location made moving his wife and their daughter to the west coast an easy decision. "In the academic world, you see which universities are doing exciting things; setting themselves apart from the pack," he says. "For me that is UBC. I'm very happy to be part of something special here."

Calling Vancouver "a city of the future," Averill believes the Asia-Pacific rim represents limitless opportunities for intercultural learning, partnerships and research. Although born in Greenwich, Connecticut, he studied at the University of Washington and calls this a homecoming of sorts. "This region has always had a great call for me."

Averill calls the first week of his six-year term at UBC unforgettable: playing the Rock Band video game with students, getting blown away by the "Rolling Stones-calibre production" of UBC's Imagine Pep Rally and winning a Deans' debate. Since then he's been developing a plan with stakeholders for the years ahead at the Faculty.

With the Faculty of Arts already a global powerhouse in social sciences and humanities research, the plan aims to put it at the forefront of teaching, learning, research and performance in North America. It involves three key

areas: excellence in teaching and learning, global partnerships and community engagement.

Making the plan a reality will take creative management and strong teamwork, Averill says, qualities he's embraced ever since organizing low-income housing and major music festivals in his 20s and 30s.

"The true magic of universities unfolds in classrooms, the community and through research," says Averill, who plays percussion and free reed instruments such as the concertina. "But to make the magic happen, you need a skilled, progressive support structure. That's what I am here to do: to encourage creative new approaches, leverage points of interest and inspire talented people to make great things happen."

**Watch Averill on a CBC program, speaking following Haiti's catastrophic earthquake earlier this year:**  
[www.youtube.com/watch?v=ft2Pglac5hc](http://www.youtube.com/watch?v=ft2Pglac5hc)

"We need to be globally connected, recruiting globally, and expansive in our thinking—and certainly willing to shake things up—if we are to succeed."

## FACULTY OF ARTS 101

Arts was one of the original faculties at UBC, alongside Medicine, Law and Applied Science

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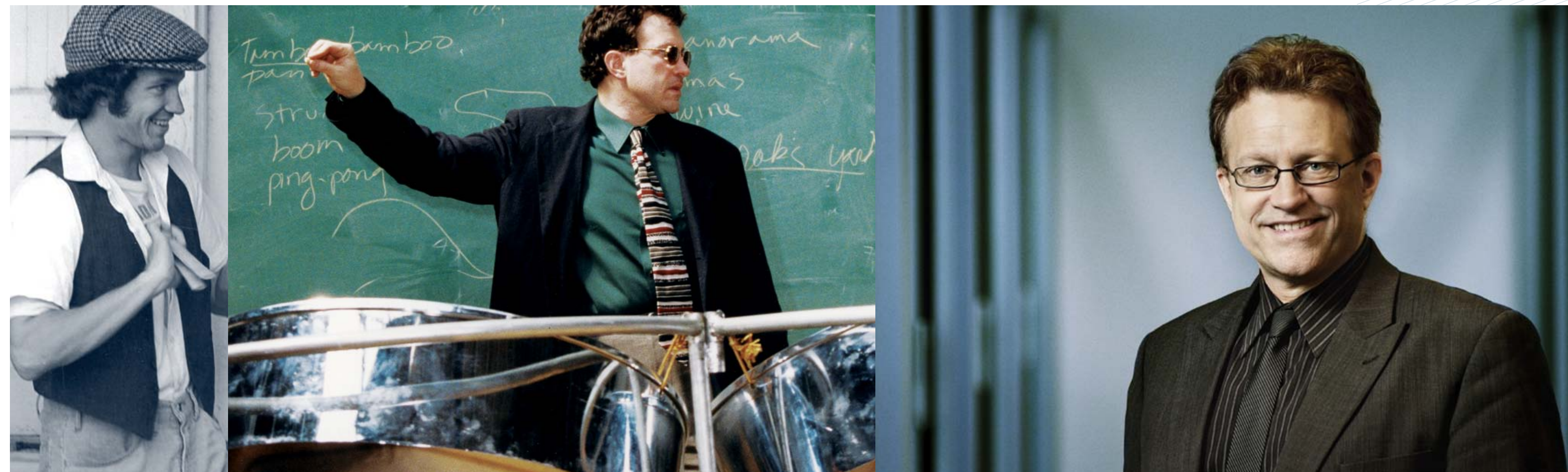
Learn more about the Faculty of Arts at [www.arts.ubc.ca](http://www.arts.ubc.ca)

## "The true magic of universities unfolds in classrooms, the community and through research."

music, he has toured in bands, worked on soundtracks for Hollywood movies, lived in Haiti following the overthrow of dictator Jean-Claude Duvalier, kayaked competitively, and even took a break from university in his 20s to work as a community housing organizer and tractor driver.

advance the national agenda, not lagging behind it, says Averill, 53. "We must keep pace with social and technological change, otherwise we will always be 'running behind the taptap (bus)," he says, making his point with a popular Haitian expression. Averill says UBC's progressive nature

Gage Averill, UBC's new Dean of Arts, says Canadian universities should be bolder, more responsive to society and less defensive.



**radio**  
Averill's WORT FM radio show, *On the Horizon*, was one of the first world music broadcasts in North America.

**bands**  
Averill's bands exposed U.S. audiences to African, Caribbean and Irish music long before the Pogues and Vampire Weekend.



**book**  
The *Globe and Mail* named Averill's book on popular music and power in Haiti, *A Day for the Hunter, A Day for the Prey*, one of the best on Haitian culture.

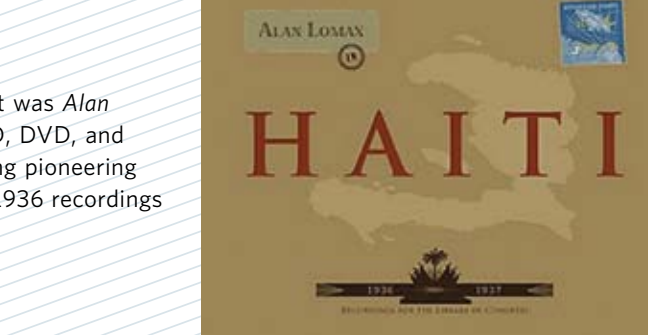


**book**  
Averill's multiple award-winning book, *Four Parts, No Waiting*, explores the social history of American barbershop harmony.



**soundtracks**  
He worked on soundtracks for two films by Oscar-winning film director Jonathan Demme: *Beloved*, starring Oprah Winfrey, plus a documentary on Caribbean music.

**anthology**  
His most recent project was *Alan Lomax in Haiti*, a 10-CD, DVD, and book anthology detailing pioneering musicologist Lomax's 1936 recordings of Haitian musicians.





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**FACULTY OF ARTS UBC KILLAM TEACHING PRIZES**

Once again the University is recognizing excellence in teaching through the awarding of prizes to faculty members. Up to six (6) prize winners will be selected in the Faculty of Arts for 2011.

**Eligibility:** Eligibility is open to faculty who have three or more years of teaching at UBC. The three years include 2010 - 2011.

**Criteria:** The awards will recognize distinguished teaching at all levels; introductory, advanced, graduate courses, graduate supervision, and any combination of levels.

**Nomination Process:** Members of faculty, students, or alumni may suggest candidates to the Head of the Department, the Director of the School, or Chair of the Program in which the nominee teaches. These suggestions should be in writing and signed by one or more students, alumni or faculty, and they should include a very brief statement of the basis for the nomination. You may write a letter of nomination or pick up a form from the Office of the Dean, Faculty of Arts in Buchanan A240.

**Deadline: 4:00 p.m. on January 14, 2011. Submit nominations to the Department, School or Program Office in which the nominee teaches.**

Winners will be announced mid-April, and they will be identified during Spring convocation in May.

For further information about these awards contact either your Department, School or Program office, or Dr. Geraldine Pratt, Associate Dean of Arts at (604) 822-6703.

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Martin Dee Photograph

Jennifer Bedford found that women's reproductive hormones were affected by food-related stress.

## Diet anxiety can weaken bones

A fresh box of Timbits appears in the office kitchen. One co-worker selects a chocolate and a honey glazed to go with her morning coffee. Her colleague hovers over the treats, fretting and deliberating. She pulls herself away, but returns later to claim the last two Timbits. Who enjoys better health?

By Lorraine Chan

Faculty of Land and Food Systems (LFS) research suggests that diet anxiety over the long run may end up chipping away at women's bone health.

In a recent study, Jennifer Bedford discovered links between cognitive dietary restraint (CDR)—the constant worry over eating choices—and women's cortisol levels, menstrual cycle function and bone density.

Bedford carried out her doctoral research, which was supported by the Canadian Institute of Health Research, with Susan Barr, a professor in the LFS Food, Nutrition and Health program who has been investigating the health impacts of CDR over the past 20 years. Barr explains that CDR is more about the attitude toward food than actual behaviour.

Bedford adds, "Women with higher CDR levels do not necessarily eat more or less than those with lower CDR, but they do experience stress from constantly monitoring what they eat in an effort to achieve a perceived ideal weight."

Over a two-year period, Bedford tracked study participants: 123 women aged 19-35, all healthy and experiencing a wide range of CDR levels. Bedford tested the women's bone density at the beginning and end of the study. She also measured their blood pressure and cortisol levels at regular intervals.

Cortisol is a stress hormone that is beneficial during acute stress, but erodes bone strength when chronically elevated. When out of balance, cortisol can have far-reaching effect, from how well the body absorbs calcium to negatively impacting bone formation.

"This area of research is important since about one in four Canadian women over the age of 50 is currently

affected by osteoporosis," notes Barr. Bedford's findings suggest that even slightly elevated levels of cortisol can take their toll. "Our data shows a correlation between cortisol levels that are still within the normal range and reduced bone density."

**"It's not just about how much butter someone spreads on their toast, but how the person feels about food and their relationship to their body."**

The study also monitored for the prevalence of subclinical ovulatory disturbances, which refer to subtle changes that women are not aware of since their menstrual cycles appear to be completely normal. But even as women experience a regular monthly period, they may not have sufficient levels of estrogen and progesterone—reproductive hormones that are critical for optimal bone health.

This was indeed the case for study participants with increasing levels of CDR, says Bedford. "These women had more subclinical ovarian disturbances, which appear to be associated with reduced bone density over the two years of our study."

However, her research also yielded

some positives, says Bedford, who completed her PhD thesis earlier in the year. "Our data shows that physical activity can be effective for increasing bone density and reducing stress."

Now undertaking a one-year dietetic internship at LFS, Bedford says she is mindful of the "big picture" when it comes to people's health and well being. "It's not just about how much butter someone spreads on their toast, but how the person feels about food and their relationship to their body." ●

"Women with higher CDR levels do not necessarily eat more or less than those with lower CDR, but they do experience stress from constantly monitoring what they eat in an effort to achieve a perceived ideal weight."

## Protecting HIV-exposed babies

By Brian Lin

**Every year, approximately 1.5 million babies are born to HIV-infected mothers around the world. In South Africa, where as many as 30 per cent of women of childbearing age are HIV-positive, an estimated 300,000 HIV-Exposed but Uninfected (HEU) babies are born annually.**

"This represents a large proportion of newborns in this region of Africa, but we know very little about how prenatal exposure to HIV impacts their immune system and overall health," says UBC Pediatrics Professor David Speert.

A pilot study currently undertaken by Speert and his collaborators from Tygerberg Children's Hospital and Stellenbosch University in South Africa confirms that HEU babies are subject to some of the same life-threatening infections typically seen in HIV-positive infants, possibly due to a combination of immunological, environmental and social factors.

"We found that the immune systems of HEU babies are in a hyper-inflammatory state—this is consistent with early HIV infection and could, along with other factors, cause them to be more susceptible to diseases and infections," says Speert, the Sauder Family Professor of Pediatrics in the UBC Faculty of Medicine.

Thanks to a \$500,000 grant from UBC's Peter Wall Institute for Advanced Studies, Speert is embarking on a larger-scale study to further investigate the reasons why HEU babies suffer from impaired immune systems. The new study—the first of its kind—will involve 100 HEU babies and the same number of infants born to HIV-negative women, all delivered at Tyerberg Hospital in Cape Town.

Humans are protected from infection by both innate and adaptive immunity, explains Speert, who also heads the Centre for Understanding and Preventing Infection in Children at the Child & Family Research Institute. Innate immunity is present from birth and does not change very much throughout life, but defects in

innate immunity are often manifested as increased infections early in life.

Adaptive immunity, or 'learned' immunity, develops through contact with infectious agents or vaccines and begins with the transfer of immunoglobulin from the placenta to the fetus and through breast milk after birth.

"We believe HEU babies are compromised in both types of immunity," says Speert. "What we want to find out is how exposure to HIV in the womb affects the development of the infant's innate immune system, how the postnatal environment impacts the child's adaptive immunological response and how the innate and adaptive systems interact."

The unique project is urgently needed partly due to the growing number of HEU babies born each year, and partly due to a shortage of research that could directly inform the establishment of clinical guidelines in developing countries, according to Speert.

**In B.C., the infection rate has remained zero for the past two years. But these strategies are difficult to implement in less privileged environments.**

Effective prevention programs, including the use of anti-retroviral drugs during pregnancy and after childbirth, have all but eradicated mother-to-child infection of HIV and help keep HEU babies healthy after birth in North America. In B.C., the infection rate has remained zero for the past two years. But these strategies are difficult to implement in less privileged environments.

"For example, HIV-infected mothers are encouraged to use formula exclusively in North America to prevent mother-to-child infection," says Speert. "In parts of Africa, where safe drinking water may not be easily

accessible, breast feeding is still regarded as a safer practice." The safety of breast feeding by HIV-infected mothers in Africa has lately been enhanced by providing anti-retroviral drugs to nursing mothers and/or their babies irrespective of the maternal immune status.

"In addition, the environment HEU babies are born into—poor nutrition, reduced parental-infant interaction and bonding, exposure to antiretroviral drugs, infectious agents in the household and other environmental contaminants—could play a role in the development of their adaptive immune system," says Speert.

"Since the problems of HEU infants have only been appreciated for less than a decade, very little research has been conducted," says Speert. "The knowledge we glean will help us find ways to protect this very vulnerable population." ●

HIV-Exposed but Uninfected (HEU) babies have been found to be susceptible to infections and diseases typically suffered by HIV-positive babies.



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# Cancer's toll on child survivors

For thousands of children and young adults in British Columbia who have survived cancer, growing up can be an ongoing battle with long-term effects from life-saving treatments. Milestones that their peers take for granted—graduation, first job, marriage, and children—may seem unattainable.

By Brian Lin

**Help may be coming for survivors of childhood cancer from an unlikely source—numbers, lots of them. A wealth of patient and population health data in British Columbia is revealing important clues that will help support survivors in their ongoing journey towards adulthood.**

"Thanks to tremendous advances in treatment options, more than 80 per cent of children diagnosed with cancer would be expected to survive at least five years," says Mary McBride, Distinguished Scientist at the BC Cancer Agency (BCCA) and a clinical associate professor at UBC's School of Population and Public Health. "But these life-saving treatments often have challenging consequences."

McBride says the majority of cancers that affect children—such as leukemia and lymphoma—are inoperable since they affect whole body systems. Others, such as brain tumors, are extremely difficult to operate on. Chemotherapy and radiation therapy for these cancers, while effective, can damage healthy cells and organ systems. Bone cancer, such as the type suffered by Terry Fox, may be treated by surgery, but

helps interpret the data with the aim of ultimately developing protocols and guidelines in collaboration with family physicians and oncologists.

"Due to treatment being given during active periods of physical and cognitive development, at least two thirds of this cohort of survivors will suffer long-term after-effects; and one third will experience a significant disability from long-term side effects," says Dr. Paul Rogers, a pediatric oncologist at BC Children's Hospital, clinical investigator at the Child & Family Research Institute and a clinical professor at UBC. "CAYACS has documented this cohort's increased utilization of the healthcare system in B.C., which could inform policymakers of the need for coordinated, long-term surveillance in order to facilitate early detection of emerging health concerns."

"This research is both pioneering and eagerly anticipated by family physicians," says Dr. Jim Thorsteinson, executive director of the BC College of Family Physicians. "Knowing that past history of childhood cancer has significant implications for the patient's current and future health and what types of problems are most of concern will allow us to work more closely with individuals to guide them in healthy choices and to monitor their specific risks."

"In B.C. we have a unique alignment of research, clinical care and government support that allows us to take a comprehensive look at how factors such as age of diagnosis, socio-economic status and treatment type impact long-term prognosis," McBride adds. "The constellation of strengths, coupled with the wealth of data, puts us in an excellent position to make a tangible difference in these people's lives."

*The Childhood, Adolescent and Young Adult Cancer Survivor (CAYACS) research program is funded by the Canadian Cancer Society (CCS) Research Institute and the CCS BC and Yukon Division.*

## "This research is both pioneering and eagerly anticipated by family physicians."

often requires amputation and can lead to negative physical and psychological effects.

"These after-effects started to become evident in the mid-1990s as the cohort of childhood cancer survivors grew," says McBride. "Today, 70 per cent of childhood cancer survivors in B.C. are over the age of 20, and at least one-third of them may have chronic health conditions that require long term treatment."

In addition to reoccurrence of their first cancer, childhood cancer survivors are at risk of developing second cancers, heart disease and endocrinological and neuropsychological abnormalities. They are also more likely to suffer from infertility and low marriage rates and experience discrimination in the workplace and the education system.

The Childhood, Adolescent and Young Adult Cancer Survivor (CAYACS) research program was designed specifically to address this growing need for long-term care. Unique in the world, the program involves researchers from UBC, BCCA, BC Children's Hospital and Simon Fraser University and utilizes multiple provincial government datasets held at UBC (PopDataBC and EduData Canada, for example), and BCCA's extensive cancer data holdings to identify risk patterns—and how the healthcare system can most effectively and efficiently support cancer survivors.

The CAYACS Program, with detailed, anonymized information on more than 3,800 childhood cancer patients who have survived five years or more, is one of the most comprehensive such datasets in the world. The research team at UBC, with expertise ranging from population health to statistics, counseling psychology and special education,



© iStockphoto/Yarek Gratewski

**Missing out:** Survivors of childhood and adolescent cancers are less likely to marry than the general population. Only one-third of survivors marry.

## Long-term cancer challenges

Today, 70 per cent of childhood cancer survivors being monitored by BC Cancer Agency are over the age of 20, and at least one-third of them may have chronic health conditions that require long term treatment.

|   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|
| <b>5.2%</b>   | <b>40%</b>  | <b>+%</b>   | <b>1/3</b>  | <b>20-40%</b>   | <b>2/3</b>  | <b>1/3</b>  |
| After 25 years, 5.2 per cent of childhood cancer survivors develop a second cancer. | 40 per cent have problems leading to hospitalization—four times the norm. | Survivors more often report adverse general health, mental health, activity limitations, and functional impairment than their siblings. | About one-third of childhood cancer survivors are enrolled in Special Education programs. | <b>Childhood brain tumour survivors achieve only between 20 to 40 per cent of the norm in standardized educational tests.</b> | Childhood cancer survivors have about two-thirds the probability of being employed than the general population. | Survivors are less likely to have married than the general population; only one-third of survivors marry. |



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## Application Deadlines

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The Early Career Scholars Program is for full-time UBC faculty who are in the professorial ranks and at the early stage of their academic careers at UBC. The Institute will appoint up to twelve untenured Assistant and Associate Professors. Assistant Professors within two years of their appointment at UBC and Associate Professors within two years of promotion at UBC are eligible. The amount of this award is \$10,000.

MARCH 1, 2011

### Exploratory Workshop Grant

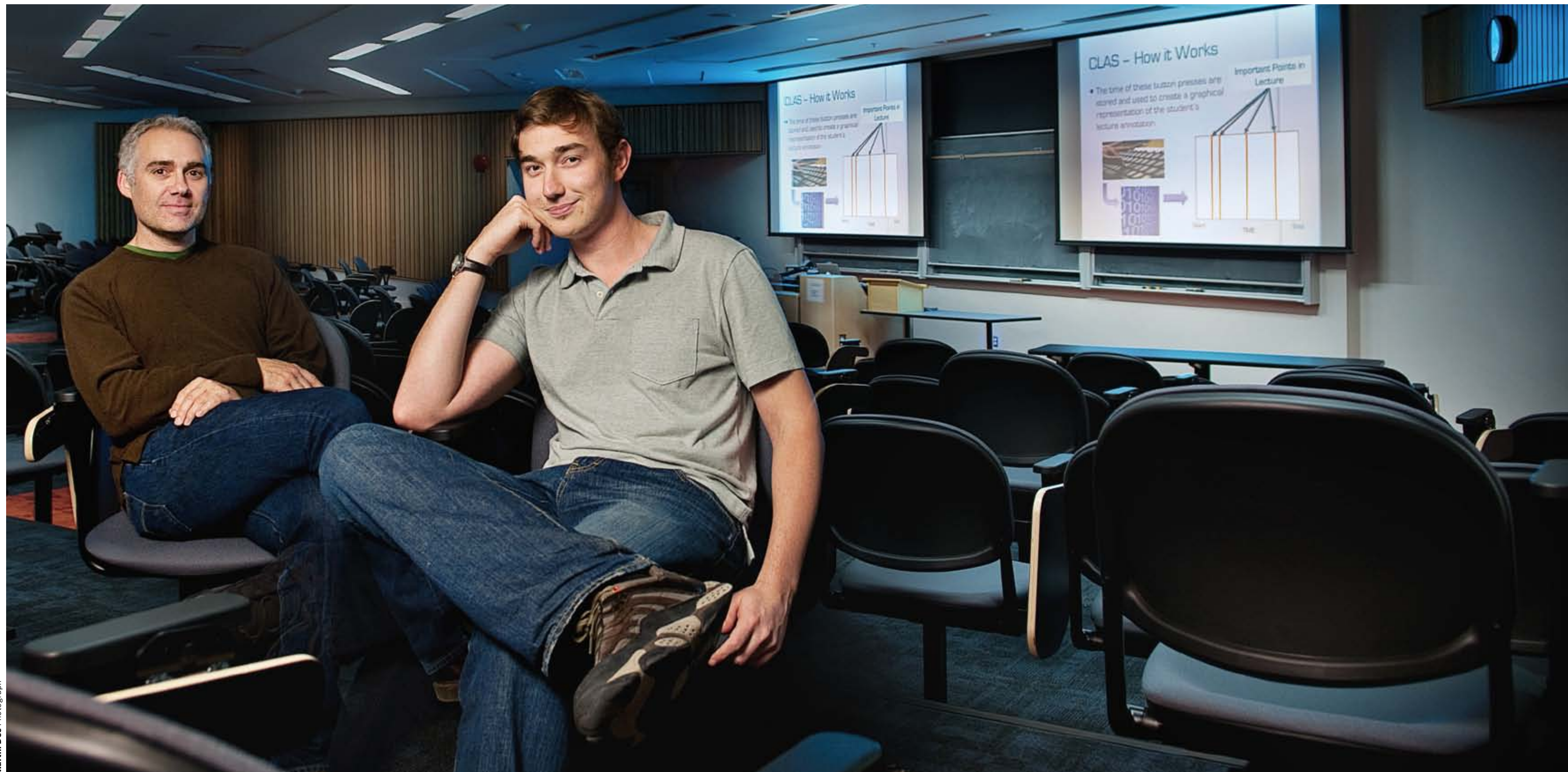
Exploratory Workshops provide funding for bringing together researchers from different disciplines at UBC with distinguished external experts to, for example, work jointly toward assessing the research possibilities in a new area. Typically, Exploratory Workshops will take place over a period of several days and have a mix of open and closed sessions. The amount of the award is up to \$20,000.

For more information, please visit our website at [www.pwias.ubc.ca](http://www.pwias.ubc.ca) or call us at (604) 822-4782.

# Researchers create video-highlighting tool

“Essentially this new learning tool enables students to highlight the key moments of a lecture just like they would highlight a textbook.”

By Basil Waugh



Martin Dee Photograph

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## External Review Request for Input

**The College for Interdisciplinary Studies**  
At the direction of the Provost and Vice President Academic, Dr. David Farrar, there will be a review of the UBC College for Interdisciplinary Studies, to be carried out by a team of distinguished academics from other universities. The Review Panel includes Dr. David Dewitt, York University; Dr. Veronica Boix Mansilla, Harvard University; Dr. Susan Roth, Duke University; and Dr. Robert Frodeman, University of North Texas.

The review will consider the success of the College in meeting its mandate to promote interdisciplinarity campus-wide, its effectiveness in the use of resources and facilities, its leadership and management, and its future progress.

The reviewers will be on the Vancouver campus on November 17, 18, and 19. All members of the UBC community are invited to send the reviewers their comments in writing, to either Dr. Herbert Rosengarten, Review Coordinator ([hjr@exchange.ubc.ca](mailto:hjr@exchange.ubc.ca)) or Ms. Stephanie Milliken ([Stephanie@millikenhr.com](mailto:Stephanie@millikenhr.com)).

The deadline for sending comments is November 8, 2010. All submissions should be clearly signed; those sent to Ms. Milliken will be forwarded to the panel in a synthesized form with no names attached.

To view the Terms of Reference and see a fuller description of the process, please go to the Provost's web-site: [www.vpacademic.ubc.ca](http://www.vpacademic.ubc.ca)

UBC's Alan Kingstone (right) and Tom Foulsham (left) are working to free students from the classroom note-taking grind.

## “Not having to take notes, students can concentrate on learning—listening, thinking, asking questions and being more engaged.”

The act of clicking has two important side-effects, says Kingstone, who leads UBC's Brain and Attention Research Lab. “Research shows that physically signaling something as important improves students' chances of retaining an idea,” he says. “Studies also demonstrate that students who are physically engaged in lectures, even in minor ways, are able to concentrate at higher levels for longer periods.”

When students log-in online, CLAS presents videos of classes with a timeline at the bottom of the screen, showing a student's clicks, allowing them to scroll through hours of lectures in minutes by jumping ahead to bookmarked sections. The team is working to add functionality, including the ability to tag video with text, search keywords and trigger clicks with keyboards and cell phones.

Students, in addition to seeing their own clicks, also have the option of viewing what their peers clicked on. Kingstone says this is important, especially for struggling students, who can find it more challenging to determine which material is most important.

**It's a dilemma facing students in lecture halls around the world. Don't take notes so you can concentrate—and just pray you remember everything important. Or take notes and hope you don't miss anything crucial while frantically writing. Thankfully, it is a choice students may no longer need to make. That's because a team of UBC researchers has created a new learning tool—the Collaborative Lecture Annotation System (CLAS)—which enables students to virtually highlight key moments in class without having to take notes. They will debut the system in UBC lecture halls in January.**

Leveraging two growing trends in education, electronic clickers and videotaped lectures, CLAS is designed to help make classes and studying more effective for students and give professors the feedback they need to craft better lessons. Developed initially to support online lectures, it has the potential to become a fixture wherever students learn.

CLAS works like this. Students use clickers in videotaped lectures to signal what they think are key moments. The team's software syncs the video with students' clicks, providing what amount to personal “best-of” reels that the class can log-in online afterwards to review.

“Not having to take notes, students can concentrate on learning—listening, thinking, asking questions and being more engaged,” says Alan Kingstone, a professor in UBC's Dept. of Psychology, who is leading the project. “Essentially CLAS enables students to highlight the key moments of a lecture just like they would highlight a textbook.”

“Knowing what your peers focus on can be immensely helpful,” says Kingstone, whose team includes postdoctoral fellow Tom Foulsham and Evan Risko, a former UBC postdoctoral fellow who is now an assistant professor at Arizona State University. “If your clicks line up with everyone's, you know you're probably in good shape. But if you're a struggling student, you can review what everyone clicked on that you might have missed.”

Kingstone says CLAS has the potential not only to improve student learning, but to help teachers to up their game. Seeing what students are clicking on allows a lecturer to judge for themselves how effective they are at presenting information, he says. “This enables lecturers to quickly see whether students are getting their key points,” says Kingstone, who envisions professors monitoring students' clicks in real-time. “This is crucial, because if students are not clicking on the right stuff, the lecturer is aware they need to deliver the information more effectively.”

CLAS is one of a number of UBC projects dedicated to advancing teaching and learning, including the Carl Weiman Science Education Initiative, the new UBC Centre for Teaching, Learning, and Technology (CTLT) and UBC's Lasting Education Achieved and Demonstrated (LEAD) initiative. Support for CLAS has been provided by UBC's Arts Undergraduate Research Award and the Arts Dean's Innovation Fund. ●

Learn more about UBC's Brain and Attention Research Lab at [barlab.psych.ubc.ca](http://barlab.psych.ubc.ca)



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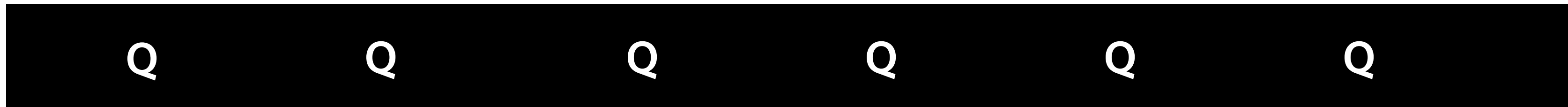
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# Growing inequality: Prof sees warning signs in Canada

By Heather Amos

Canadians have lived in a cohesive society for the past 60 years, but one UBC researcher recognizes the signs that it's fracturing. UBC Reports sat down with Charles Ungerleider, a professor in UBC's Faculty of Education who studies the sociology of education, to discuss how Canada is changing.

"How much and what kinds of differences can exist in a social group without the group fracturing?"



Q

**What is social cohesion and what does it mean to Canada?**

A

A good way to define social cohesion is to ask the question: How much and what kinds of differences can exist in a social group without the group fracturing? The problem of social cohesion is particularly acute for Canada: its geography is vast; its population is diverse; its political landscape is fragmented; its central institutions are weak; and its closest neighbour is enormously powerful.

Q

**How does Canada do in social cohesion?**

A

Given the pressures, Canada does quite well. After the Second World War, Canada adopted policies and practices that have promoted social justice and contributed to social cohesion including human rights legislation, recognition of official languages, the adoption of an official policy of multiculturalism, immigration reform and many other initiatives. By addressing inequalities, Canada became a more cohesive society.

Q

**What are the consequences of having an increasingly egalitarian society?**

A

On the personal level, the percentage of Canadians in inter-religious unions and the percentage of Canadians who marry people from different ethno-cultural backgrounds has been increasing steadily over time. On the public level, Canadian election studies from 1993 to 2004 show that immigrant interest and participation in politics exceeds the levels for the Canadian-born population. These are signs of Canada's capacity to incorporate difference. But the progress we've made is fragile and today I see evidence of growing inequalities between groups.

Q

**What warning signs do you see in Canada?**

A

Despite the progress Canada has made, racism, discrimination, and inequality remain relevant issues for Canadians. I can provide examples in three different contexts. Since the attack on the World Trade Centre, the ways that some Canadians talk about security seems xenophobic. Since the 1980s, the earnings of successive cohorts of immigrants have declined in relation to the earning of those born in Canada. In Canada's three largest cities, there is evidence of significant educational inequalities among ethno-cultural groups in terms of graduation rates and educational pathways.

Q

**If the trends and problems continue, what's the worst case scenario?**

A

When there are significant inequalities between groups and members of disadvantaged groups feel that there is nothing they can do to overcome the obstacles they face, they become frustrated and alienated. This may make them more prone to use deviant and possibly violent means to get what they need. We don't want to get to that point.

Q

**What can we do to prevent this?**

A

We need to be more vigilant about the differences that already exist, to identify what is at the root of the problem, and act to change the conditions that gave rise to the problem. For instance, regarding high school graduation rates, we want to know what is impeding the progress of some groups of students. We need to use our understanding of the impediments to remove those barriers. As an educator, I'm an optimist. Social policy can and does address inequality in income. Informed educational policies and practices can improve student success in schools. We also should show our disapproval of xenophobic speech and support those who are victimized. ●

## Signs for concern

**In Vancouver, when you look at students who don't speak English at home, 68 per cent of Vietnamese-speaking students graduate. But in Montreal, students who speak Vietnamese have a graduation rate of 84 per cent.**

**Ungerleider says we need to be attentive about these differences and ask: Why are the Vietnamese not as successful here in Vancouver, as they are in Montreal?**

| High school graduation rates in Vancouver | Language used at home | Cumulative graduation within jurisdiction % |
|---|-----------------------|---|
| Non-English Speakers All                  | Sub-groups            | 80  |
|   | Chinese               | 87  |
|   | Punjabi               | 84  |
|   | Philippino            | 78  |
|   | Hindi                 | 69  |
|   | Korean                | 78  |
|   | Spanish               | 61  |
|   | Vietnamese            | 68  |
|   | Persian               | 73  |
|   | Russian               | 69  |
| Arabic                                    | 67                    |   |
| English Speakers                          |                       | 75  |
| High school graduation rates in Montreal  | Language used at home | Total graduation rate %                     |
| Non-French Speakers All                   | Sub-groups            | 62.4  |
|   | Spanish               | 53.2  |
|   | Arabic                | 70.7  |
|   | Creole                | 40.5  |
|   | Chinese               | 80.6  |
|   | Vietnamese            | 84.1  |
|   | Portuguese            | 52.9  |
|   | Persian               | 66.0  |
|   | Tagalog               | 57.3  |
|   | Romanian              | 84.4  |
| Tamil                                     | 50.6                  |   |
| French Speakers                           |                       | 66.3  |

Source: Charts: McAndrew, M. et. al., (2009) Educational Pathways and Academic Performance of Youth of Immigrant Origin.

Charles Ungerleider is a professor in the Faculty of Education who studies the sociology of education.



Martin Dee Photographs



# Corporate criminal intent

By Jody Jacob

Guilty minds and criminal intent are not just for people, says UBC Philosophy prof. Roger Shiner. He's making a case that these legal concepts ought to apply to corporations.



Jody Jacob Photograph

**UBC professor Roger Shiner is working to prove his theory that corporations should be held to the same standards of accountability for criminal offences as a person is.**

Shiner, who teaches philosophy at UBC's Okanagan campus, received \$67,466 from the Social Sciences and Humanities Research Council (SSHRC) to develop his theory for the criminalization of corporate wrongdoing.

"Corporations can cause harm in much the same way that human beings cause harm," explains Shiner. "Our legal system is a public mechanism for holding individuals accountable for the harm that they do, especially the criminal law."

Despite the kind of harm corporations do—whether they act in careless ways that result in death or environmental damage, for example—Shiner says corporations are very rarely charged with criminal offences.

"If done by an individual, he or she would be charged under the criminal law," he says. "My fundamental interest is finding out why that is, and making a pitch that this shouldn't be the case."

One of the issues Shiner is examining is how the courts find it difficult to apply to corporations the standard conditions for criminal guilt or criminal fault.

"For example, take the legal term Mens Rea (the guilty mind)," says Shiner. "If you or I ought to be found guilty of a criminal offence the court has to prove we knew what we were doing—meaning we did it intentionally or knowingly or recklessly.

"How do you apply terms like that to corporations?" he asks. "The usual argument is that we can't apply it to corporations because they don't have minds. So a big part of my research is really to take that question on—to look at exactly what it is to attribute an intention to somebody and to try and show there is really no problem in treating corporations in the same way."

The second part of Shiner's research addresses the notion of strict liability—the idea that you can be held criminally liable just because you caused the harm, without further investigation into intent.

"And of course everybody says that would be a horrible

thing to do to a person," says Shiner. "You can't subject persons to strict liability, and again the tendency in both the legal and philosophical literature is to think the same would be true of corporations.

"I want to show that, no, it isn't. The moral reasons for not subjecting persons to strict liability don't apply to corporations: so there is nothing wrong, in principle, in subjecting corporations to strict liability, even under the Criminal Code."

Roger argues that the reasons for not subjecting persons to strict liability have to do with their moral status as natural persons.

"Persons are ends in themselves, and should be treated as such. Corporations may be legal persons, but they are not natural persons," he says. "The Supreme Court has recognized this legally in not extending to corporations some of the protections the Charter affords to natural persons."

In time, Shiner hopes his research could have an impact on the design and application of the law in Canada.

"If someone said we have to start looking at these corporate cases differently, or we have got to start prosecuting where we didn't before, or we have to change the way we are handling the regulation of corporations, that would be the ultimate payoff for me." ●

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